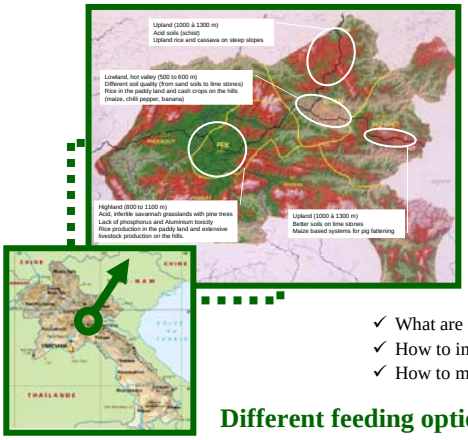
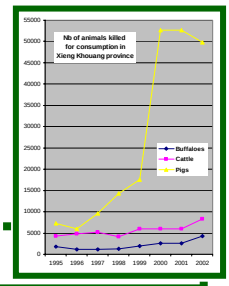
Improvement of Feed Resources for Animals in Smallholder Farming Systems of *Xieng Khouang* Province, Lao PDR

LIENHARD P., SOSOMPHOU T., SIPHONGXAY S., TIVET F. and SEGUY L.



Lao Government considers development of the livestock industry to be a priority since cattle are an important export of Lao PDR and also the main source of monetary income for most farmers. *Xieng Khouang* Province is of particular interest since estimated area of 60.000 ha of very acid, infertile savannah grasslands located in the vicinity of the provincial capital could be used to improve animals feeding.

Lack of feeding resources is however a major limitation to livestock development. Fodder seeds availability, limited fodder growth related to poor soil fertility, free grazing, labour requirement for a non-edible crops are some of the factors explaining failures experienced to introduce improved pastureland .

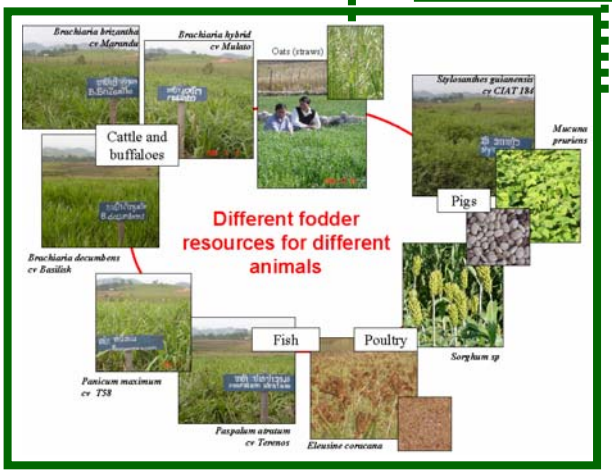


Since 2004, the Lao National Program of Agro-ecology has been working on three different topics to overcome these limiting factors:

- ✓ What are the different feeding options to supplement traditional feeding resources?
- ✓ How to improve fodder access to farmers?
- ✓ How to make fodder crops more attractive economically to farmers?

Different feeding options to supplement different animals throughout the year

Many *Brachiaria* species, such as *B. brizantha*, *B. decumbens* or new hybrid Mulato, have confirmed to be forages of particular interest since they are draught resistant and remain green late into the dry season. Small-grain cereals (*Sorghum sp, Eleusine coracana)* and some temperate cereals (oats, wheat) grown during the winter season are giving promising results to supplement both ruminants and non ruminants during the cool season.




P.Lienhard - 2005

Improving forage access to farmers

Local seeds multiplication contracts have been established with farmers groups to improve both forage access and forage interest (through a short-term income provided by forage seeds sales) to farmers.

Making fodder crops economically more attractive to farmers


O. Hentzy - 2001
Brachiaria ruziziensis


Eleusine coracana
L.Seguy - 2001

Intensification of livestock systems requires minimum investments for fences, fertiliser, labour force etc. Planting a fodder crop to provide additional animal feed during feed shortages might not be incentive enough to farmers. Several schemes were therefore developed to promote a better integration in between cropping and livestock systems.

➢ Rotational cropping systems integrating two to four years of forage production

First results are promising since both animal feeding and soil fertility are improved: well managed, the forage crop provides a better weeds control, soil organic matter improvement, erosion control and soil structure improvement than traditional fallow. As main constraint, fences have to be maintained during the forage period to control grazing rate.


Maize + Stylosanthes guianensis
P.Lienhard - 2004


Maize + Brachiaria ruziziensis


Cassava + Stylosanthes guianensis
P.Lienhard - 2004

➢ Temporary association between forage and crop

Maize, rice and cassava were associated to different forages to reduce improved pastureland establishment costs. Fodder crop benefits from fencing, weeding, fertilising etc. that are provided to the main crop and insure in return a better weed control. As a main constraint, competition for light, water and nutrients can occur if forage crop is associated too early to the main crop (especially with grasses).


P.Lienhard - 2004

➢ Permanent association between maize and non-twining fodder legumes

Association between cereals and legumes are often encouraged since legumes are known to improve soil fertility and benefit to cereal yields. Fodder legumes species were selected according to their cycle length (perennial species were preferred in order to avoid every-year re sowing) and vegetative behaviour (creeping but non-twinning species to avoid yield losses on cereals crop). Promising results were experienced with *Desmodium uncinatum*..

Conclusion and recommendations:

Development of the livestock industry is a Lao government priority. This development will not be possible without an intensification of animals fodder systems that require a protection of fodder resources and a minimum fertilisation supply for the very infertile areas. One key issue could be to promote new farming systems in which improved fodder resources can provide benefits both for crops and livestock productions.

Lao National Program of Agro-ecology
PO Box 10990, Vientiane, Lao PDR; email: pronaexk@laotel.com, ciradca@laotel.com; Tel/fax: (856) 21.77.00.27